

# **Arbitrator Hardware Installation**

# Arbitrator SI Unit and Cables

## AG-CPD15P



P2 recorder (VPU)

## AJ-P2C016RG



16GB P2 Card

## AG-CK10P



Camera



Camera Mount



Camera Cable  
(Short)



Camera Cable  
(Long)

## AG-CR12P



GPS Antenna



Power Cable  
for P2 recorder



External GPIO  
Trigger Cable



USB Extension  
Cable



USB/LAN Adaptor  
(including a driver CD)



LAN Cable  
(Crossing type)

## TDSS-900-PNA



Digital Wireless  
Mic Receiver &  
Transmitter



In Car Mic



Receiver Cable

## OPTIONS

### AG-RCP30P



Control Panel



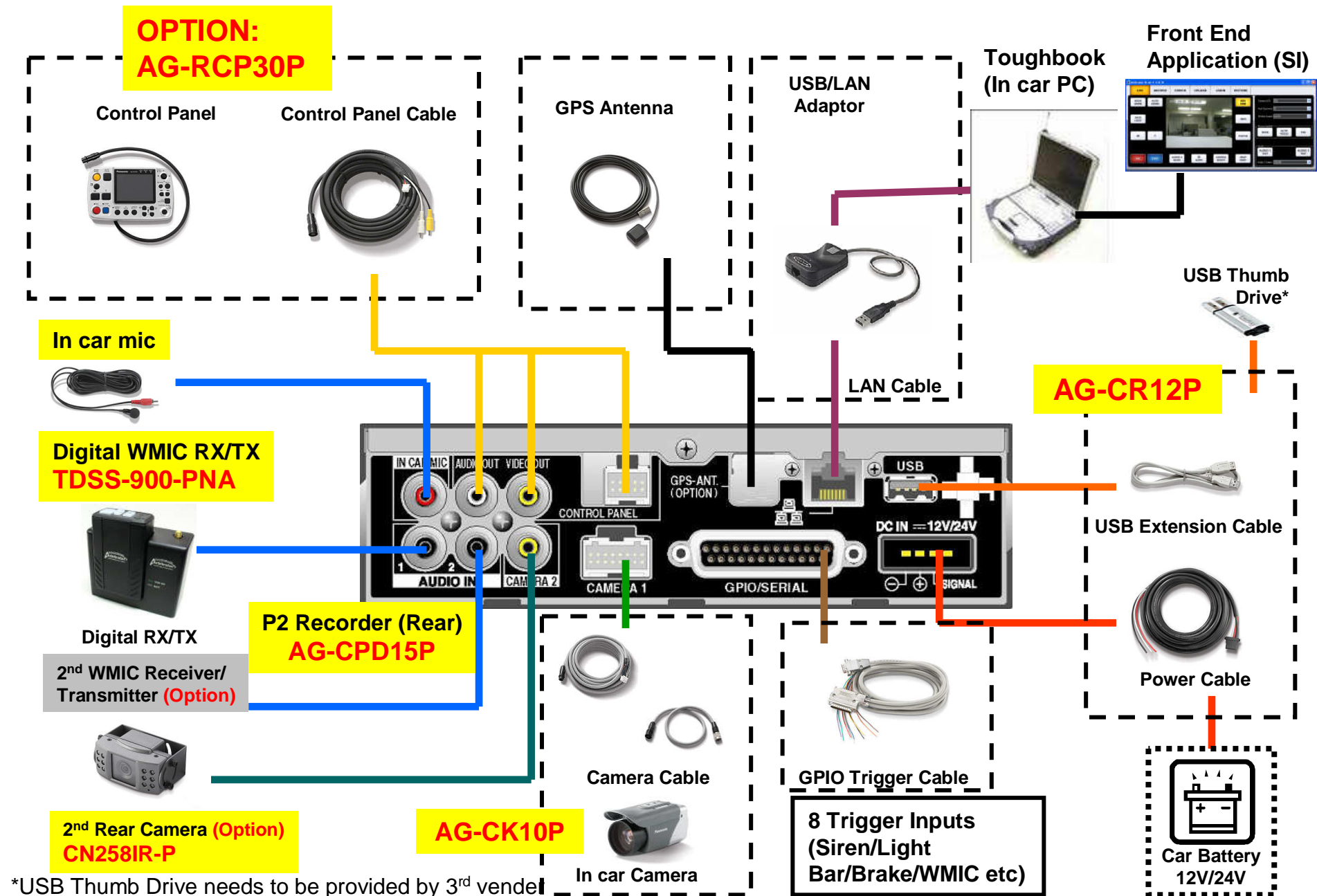
Control Panel  
Cable

### CN258IR-P



2<sup>nd</sup> Rear Camera

## Arbitrator SI System Configuration



\*USB Thumb Drive needs to be provided by 3<sup>rd</sup> vendor

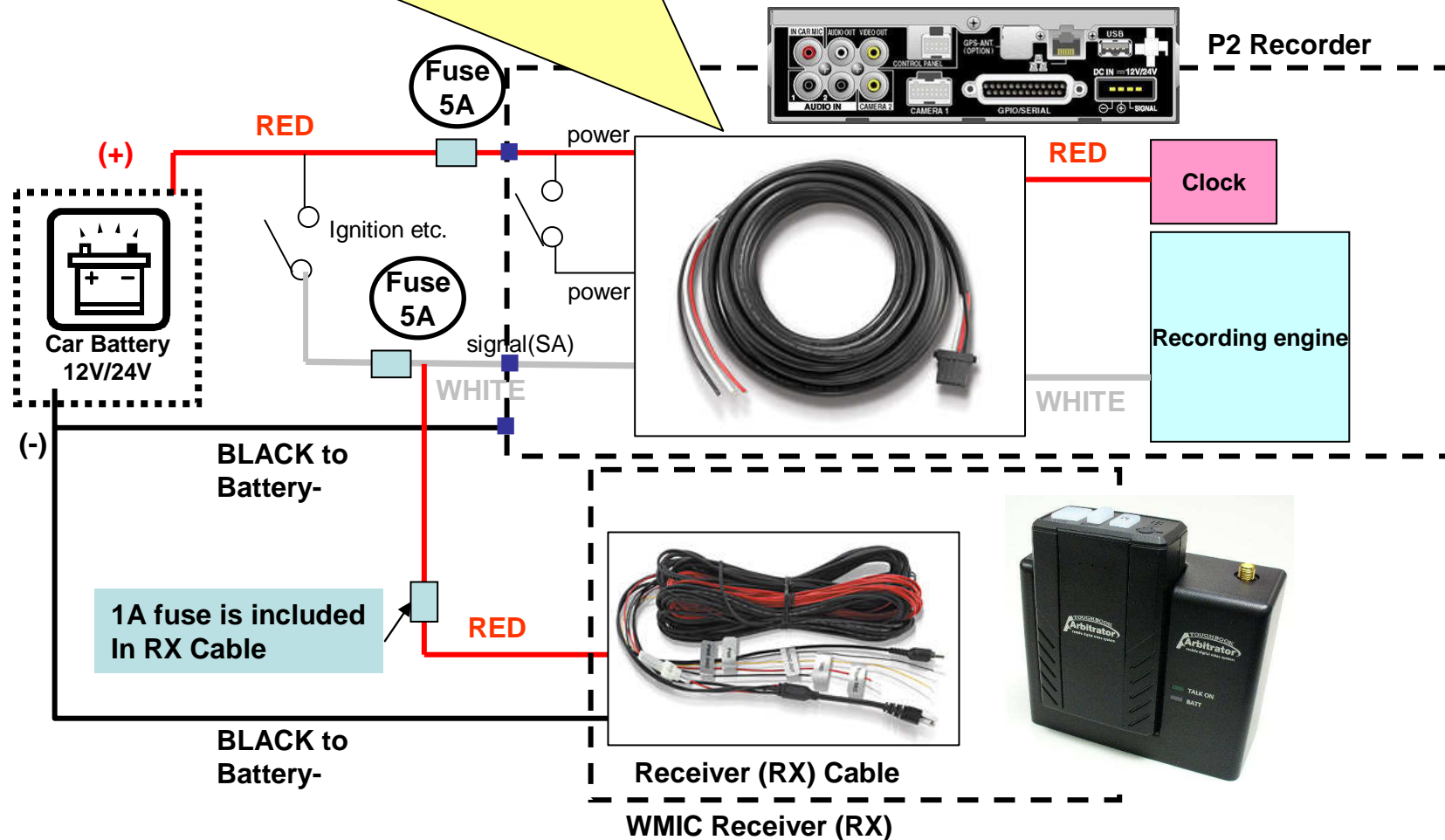
## P2 Recorder, Wireless MIC to Battery Connection (w/ VPU timer)

**“RED” cable** : Connect via **5A fuse (Not included in Arbitrator kit)** to **Battery (+)**

**“WHITE” cable** : Connect via **5A fuse (Not included in Arbitrator kit)** to ACC line or switch.

**Don't** connect to Battery (+)

**“BLACK” cable**: Connect to Battery (-)

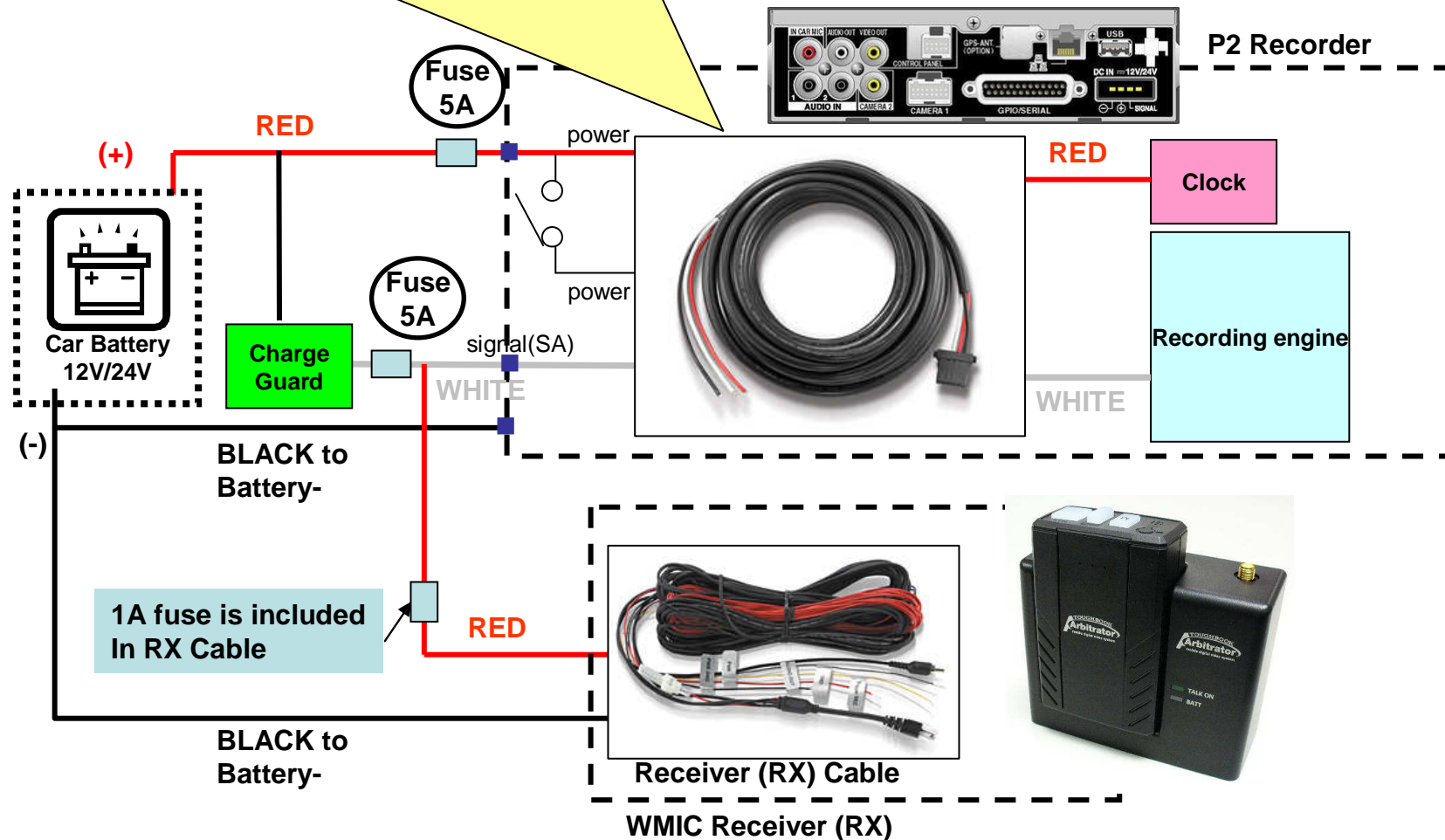


# P2 Recorder, Wireless MIC to Battery Connection (w/ Charge Guard)

**“RED” cable** : Connect via **5A fuse (Not included in Arbitrator kit)** to **Battery (+)**

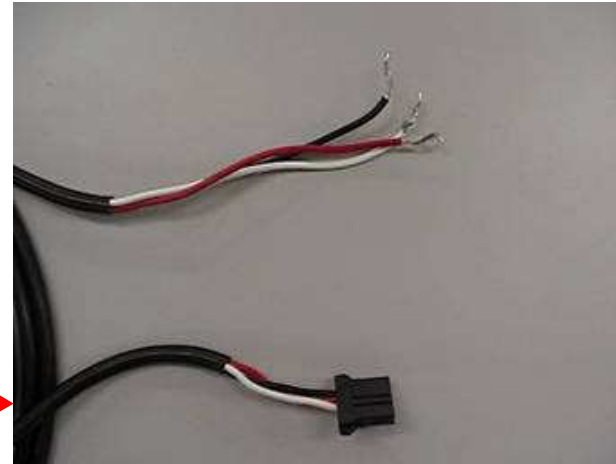
**“WHITE” cable** : Connect via **5A fuse (Not included in Arbitrator kit)** to ACC line or to the Charge Guard. **Don't** connect to Battery (+)

**“BLACK” cable**: Connect to Battery ( - )

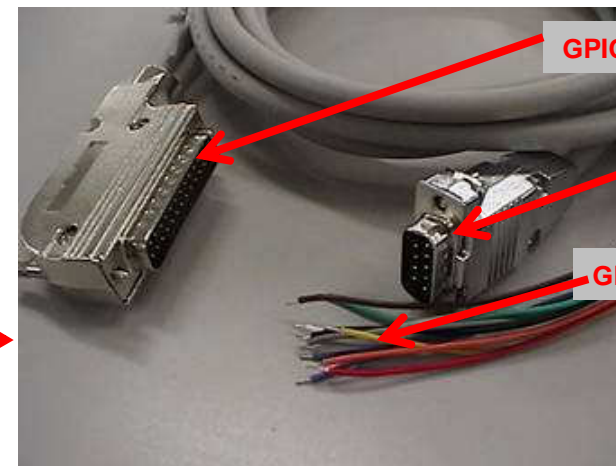
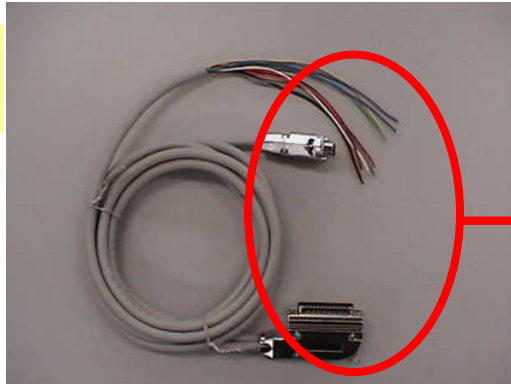


# AG-CR12P Cables for P2 Recorder

Power Cable  
for P2 recorder



External GPIO  
Trigger Cable

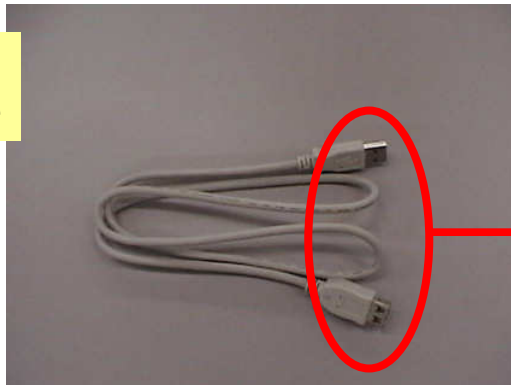


GPIO/Serial Connector

RS-232C

GPIO Trigger Cable

USB  
Extension Cable





## Network Cables(AG-CR11P), Control Panel Cable, Camera Cable

**USB/LAN Adaptor**  
(including a driver CD)



**LAN Cable**  
(Crossover type)



**Control Panel Cable**  
(included in AG-RCP30P)

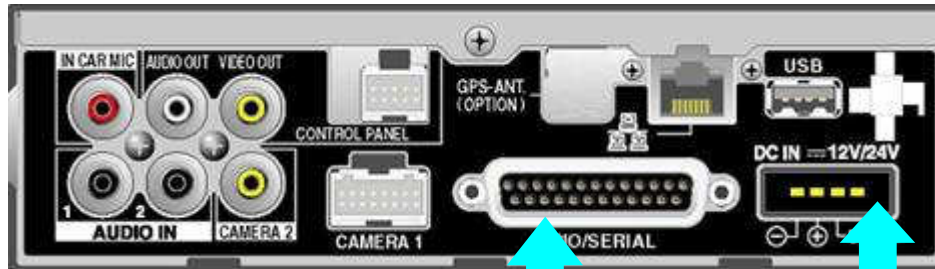


**Camera Cable**  
(included in AG-CK10P)



# External GPIO Trigger Cable/Power Cable Connection

P2 Recorder  
(Rear)



Power Cable



External GPIO  
Trigger Cable

Black (GND: -): Connect to the negative ( - ) terminal of the battery

Red (BATT: +): Connect via a 5A fuse to a power supply that is constantly on, regardless of ignition key ON/OFF status

White (SIGNAL): Connect the signal line via 5A fuse to the ACC line or to the output terminal of a timer box

Others: Input signal lines

White: REC Tally output line

**Black: Connect to the NEGATIVE(-) terminal of the battery**

Gray: Input signal or Speed pulse signal

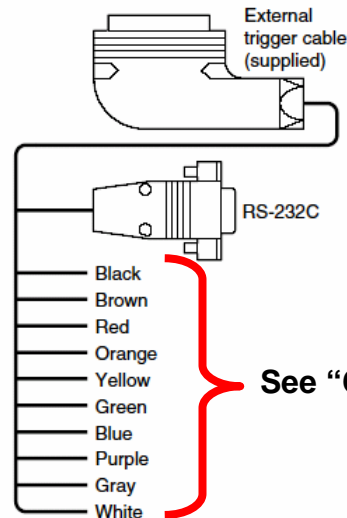
RS-232C: Connect to equipment with serial connectors



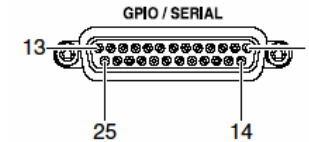
# External GPIO Trigger



External GPIO Trigger Cable  
(supplied)



See "Cable Color" as below chart



Pin #	Signal	Remark	Cable Color	Trigger Name (Example)
9	GND	GPIO	Black	Black <b>MUST</b> be grounded (To ground at <b>Negative battery terminal</b> )
10	GPIO1	In	Brown	Wireless Mic
11	GPIO2	In	Red	Light Bar
12	GPIO3	In	Orange	Brake Indicator
13	GPIO4	In	Yellow	Siren Indicator
21	GPIO5	In	Green	Gun Lock
22	GPIO6	In	Blue	Other
23	GPIO7	In	Purple	Other
24	GPIO8	In	Gray	Speed Sensor with pulse table setting only
25	GPIO9	Out	White	For Low Voltage Output only (LED or Relay)

\*GPIO for Wireless Mic, Light bar, Siren etc.. as above example.

\*Serial (RS-232C, Pin number either of 2-8 & 20) for Rader Gun etc

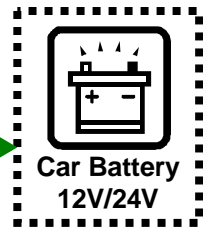
# Digital Wireless Mic Receiver Connection



Digital Wireless Mic Receiver & Transmitter



Receiver (RX)



Car Battery  
12V/24V

**RX Cable Power (RED)**  
To Battery via Timer Box  
**RX Cable Power GND (Black)**  
To Battery (-)

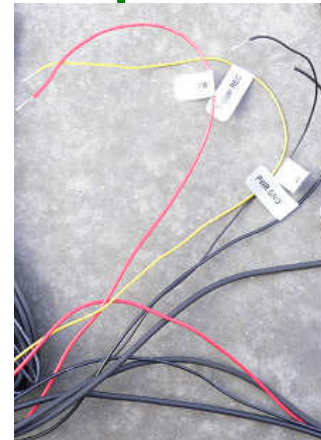


Receiver (RX) Cable



To Receiver Jack

To Audio In 1 (RCA PIN)



**RX Cable Trigger REC (Yellow)**  
To either of GPIO 1 to 8  
(Ex. GPIO1 Brown)  
**RX Cable GND (Black)**  
To Battery(-)

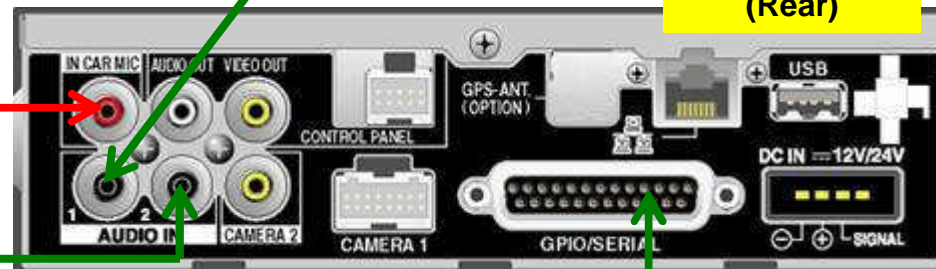
In Car Mic



To In Car Mic

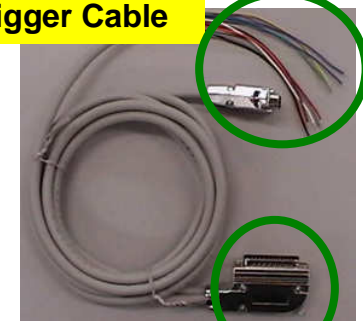
2<sup>nd</sup> Wireless Mic Receiver (optional)

To Audio In 2



P2 Recorder (Rear)

External GPIO Trigger Cable

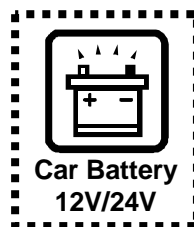
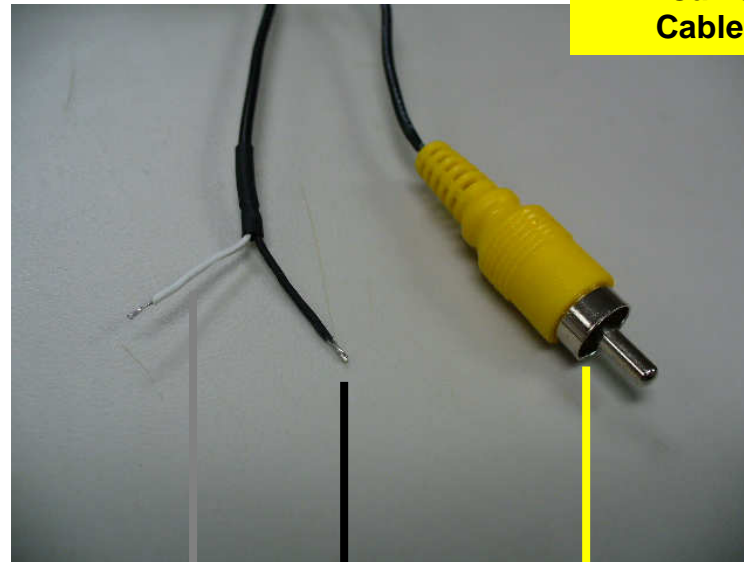


## 2<sup>nd</sup> Rear Camera (Option:CN258IR-P) Connection

2<sup>nd</sup> Camera  
(Front)



2<sup>nd</sup> Camera  
Cable

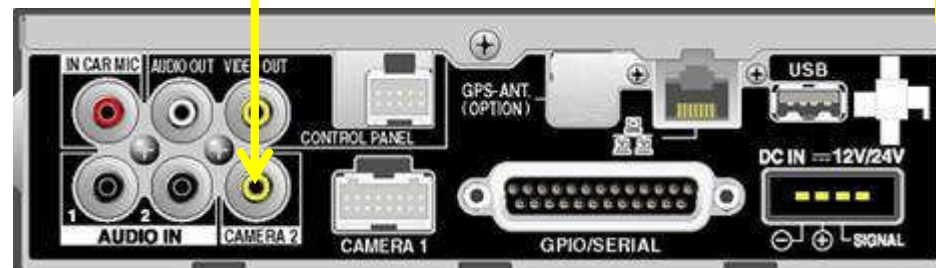


White to Battery (+)  
via Timer Box

Black to Battery (-)

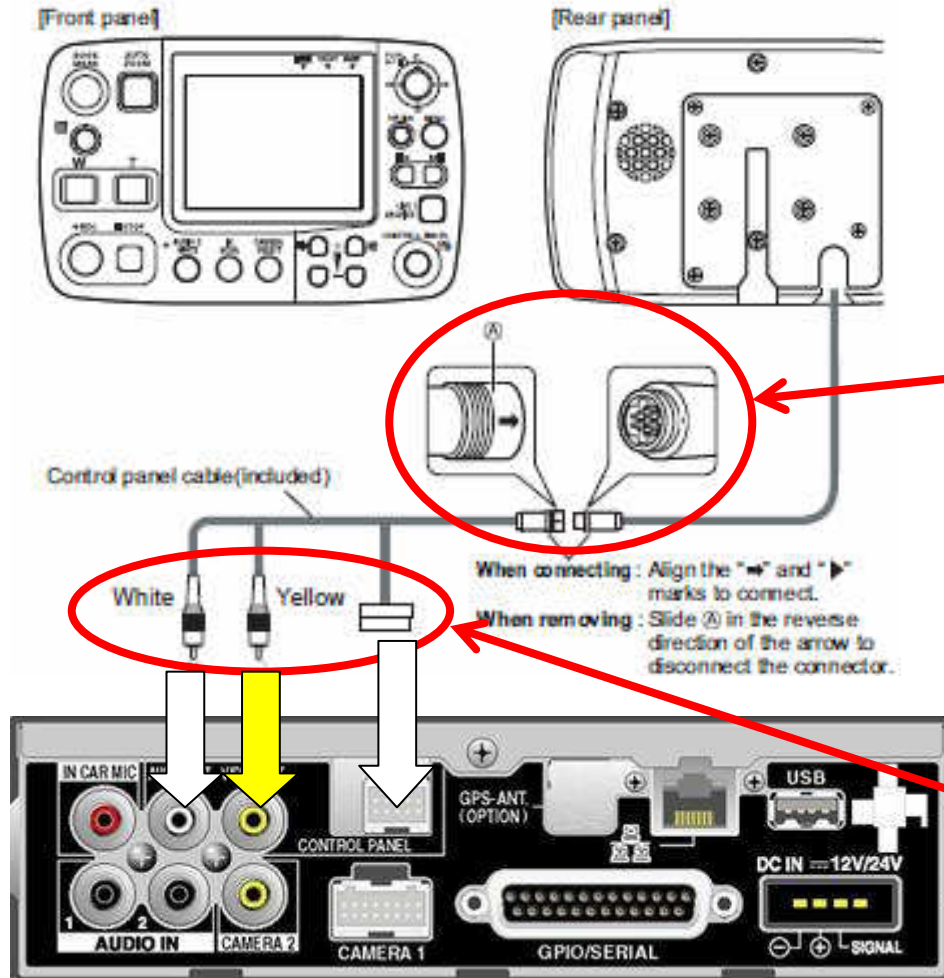
Yellow to Camera 2

P2 Recorder  
(Rear)



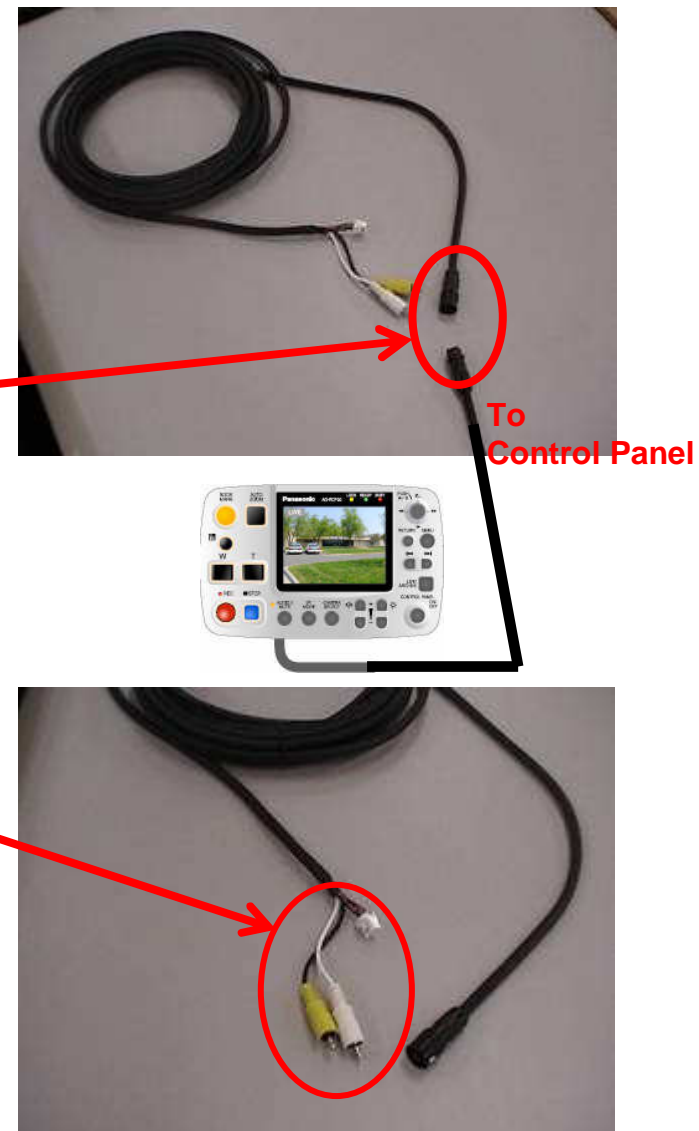
## Control Panel (Option: AG-RCP30P) Connection

## Control Panel

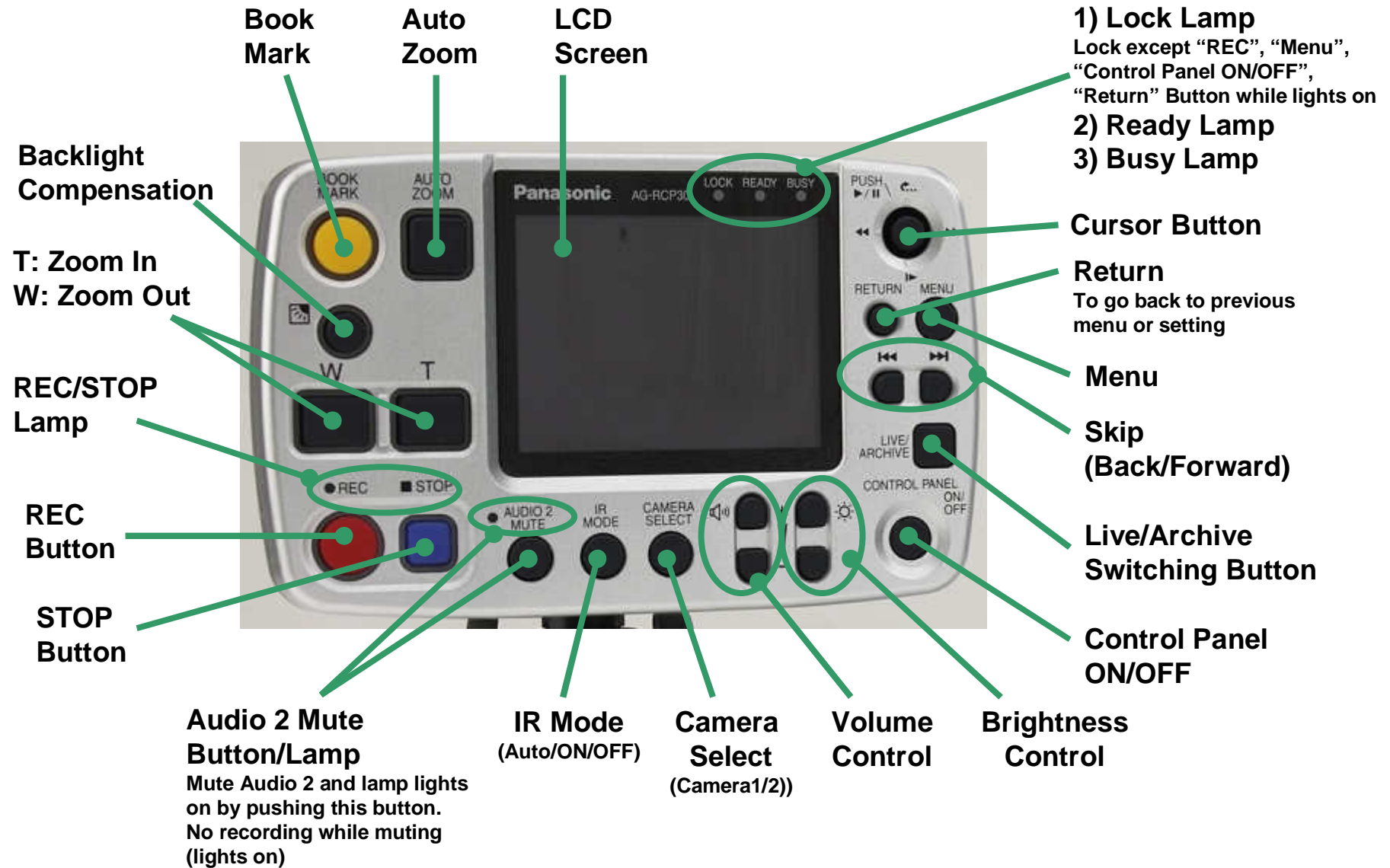


## P2 Recorder (Rear)

## Control Panel Cable



# Control Panel (Option: AG-RCP30P) Buttons







## Before use, Format 16G P2 card by SI

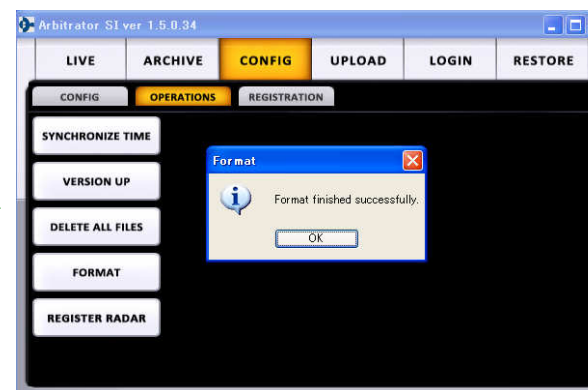
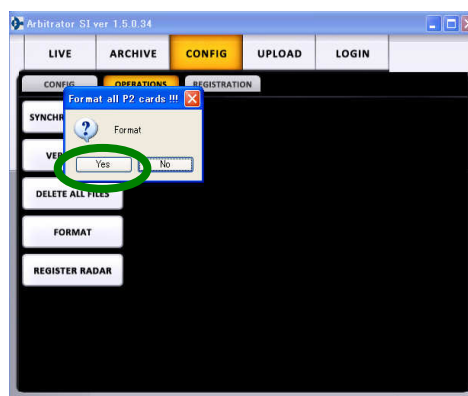
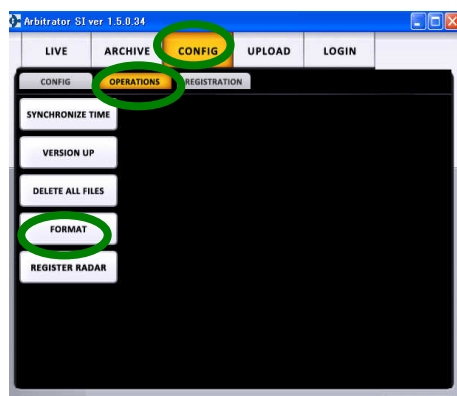
- Formatting 16G P2 card is mandatory at the first time usage.
- When modified (copy, delete, move etc) folders in P2 Card, please format the card.  
(If you copy the folders/files from 5 slot P2 drive or PC PCMCIA to PC HDD, please format the card.)
- The format of 16G P2 card is available by Control Panel, 5 slot P2 drive and PC PCMCIA slot.
- Note that 16GB P2 card limit the number of files that can be recorded per below chart.

# of recording days	# of maximum recording files per day	
	With Bookmark	Without Bookmark
62 days	340 files	508 files

### <How to format by SI?>

- Insert new 16GB P2 cards to P2 Recorder (VPU)
- Go to “Config” by SI menu and select “Operations”. Press “Format” and then select “Yes”

(c) Press “Format” and select “Yes”. Then, “Format finished successfully” message will be appeared when the format is completed.







## Before use, Format 16G P2 card by Control Panel (Option: AG-RCP30P)

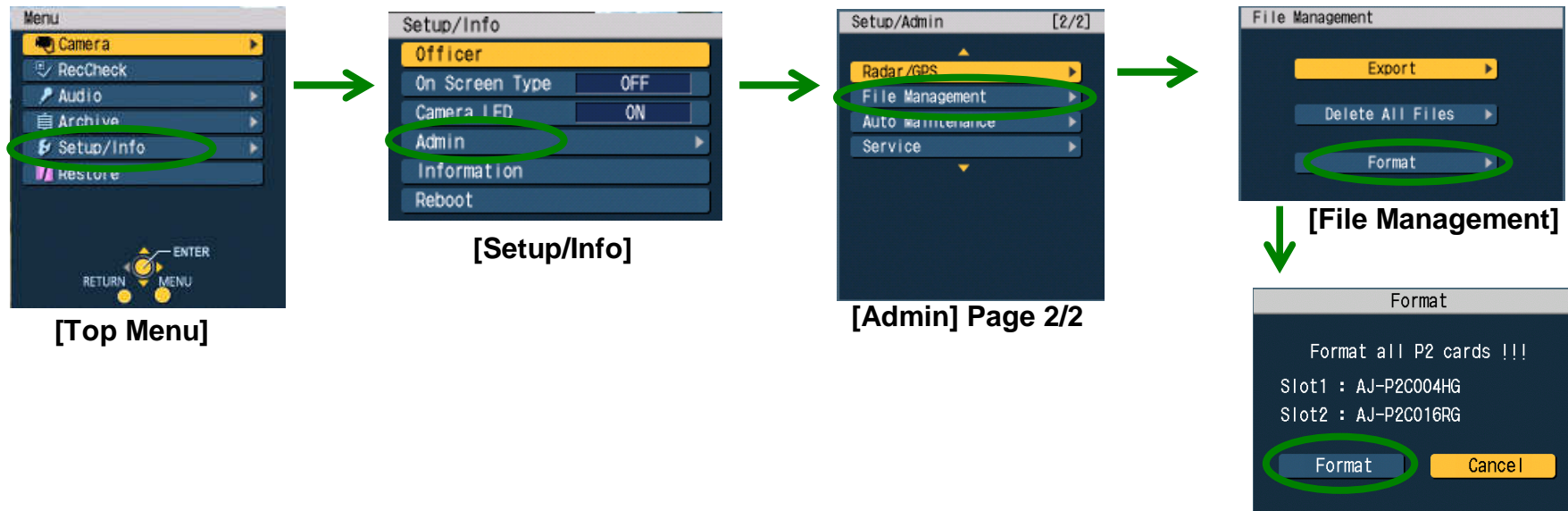
- **Formatting 16G P2 card is mandatory at the first time usage.**
- **When modified (copy, delete, move etc) folders in P2 Card, please format the card.**  
(If you copy the folders/files from 5 slot P2 drive or PC PCMCIA to PC HDD, please format the card.)
- The format of 16G P2 card is available by Control Panel, 5 slot P2 drive and PC PCMCIA slot.
- Note that 16GB P2 card limit the number of files that can be recorded per below chart.

# of recording days	# of maximum recording files per day	
	With Bookmark	Without Bookmark
62 days	340 files	508 files

### <How to format 16GB P2 card by Control Panel?>






- Insert new 16GB P2 cards to P2 Recorder (VPU)
- By Control Panel Menu, go to “Setup/Info”, “Admin (page 2/2)”, “File Management” and select “Format”
- Press “Format” when “Format all P2 cards!!!” message is appeared.

Then, you will see “All cards are formatted” message when the format is completed.





## 16GB P2 Card Format by Products / Combination with Windows version

Format by	How to format?
SI (FE Application) 	By SI Menu, go to “Config”-”Operations”-”Format”.
Control Panel 	By Control Panel Menu, go to “Setup Info”-”Admin”-”File Management”-”Format”
PC PCMCIA slot (Windows) 	Select the removable disc drive in PC that inserted P2 card. Right click on that drive and select “format”
5 slot P2 Drive (AJ-PCD20P) 	Select the removable disc drive in PC that inserted P2 card. Right click on that drive and select “format”
P2 Store (AJ-PCS060G) 	Press “Format P2C” button on the unit

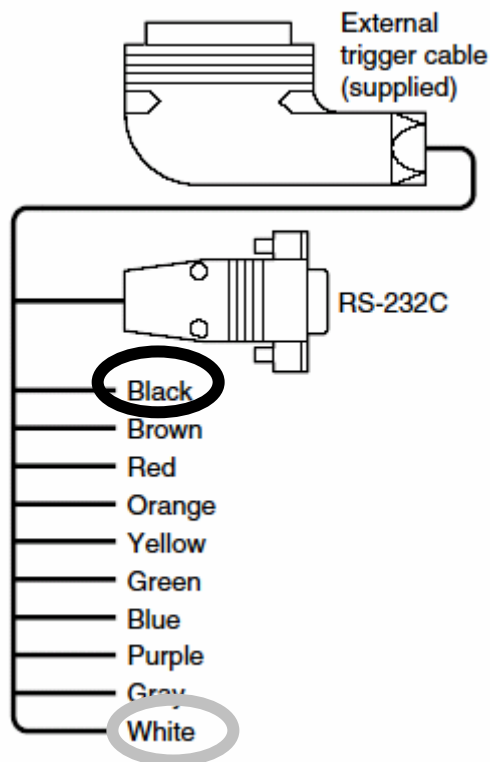
	Vista	XP Pro SP2	2000 Pro SP4 + Hot Fix	Server 2003
PCMCIA slot (Card Bus) in PC	Y	Y	N	N
5 slot P2 Drive (AJ-PCD20P) through USB	Y	Y	Y	N
5 slot P2 Drive (AJ-PCD20P) though IEEE1394	Y	Y	N	N
P2 Store (AJ-PCS060G) through USB	Y	Y	Y	N

**For the users who need Win2000 SP4+Hot Fix, please contact 1-800-LAPTOP5 (1-800-527-8675) to obtain the copy of the file.**

# Appendix

## External GPIO Trigger (External LED)

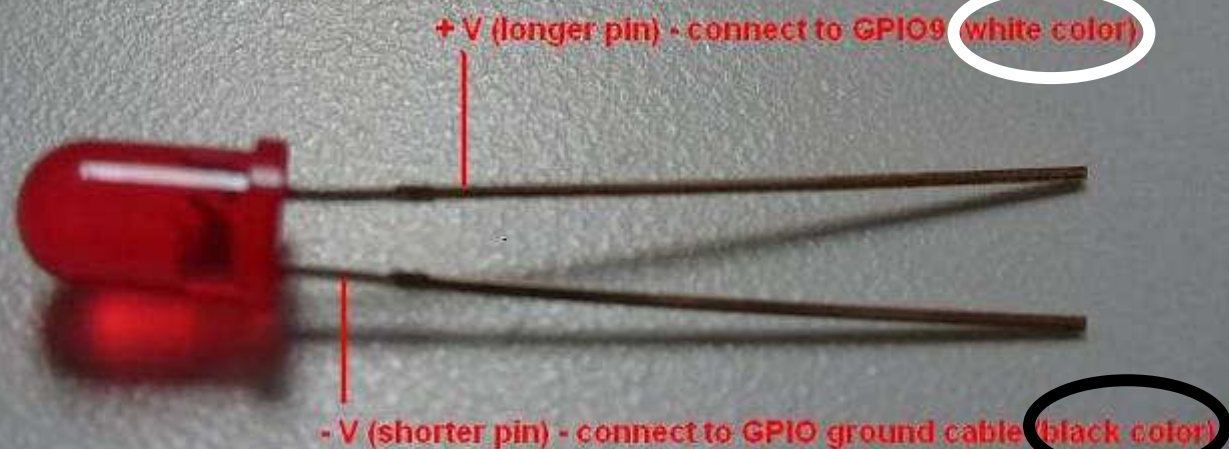
If the officer would like to see the REC status from inside of car additionally, it is possible to set up the LED light connecting to GPIO.



RadioShack Part# 276-041

**Absolute Max Ratings**  
**Forward Voltage: 3.0VDC max**

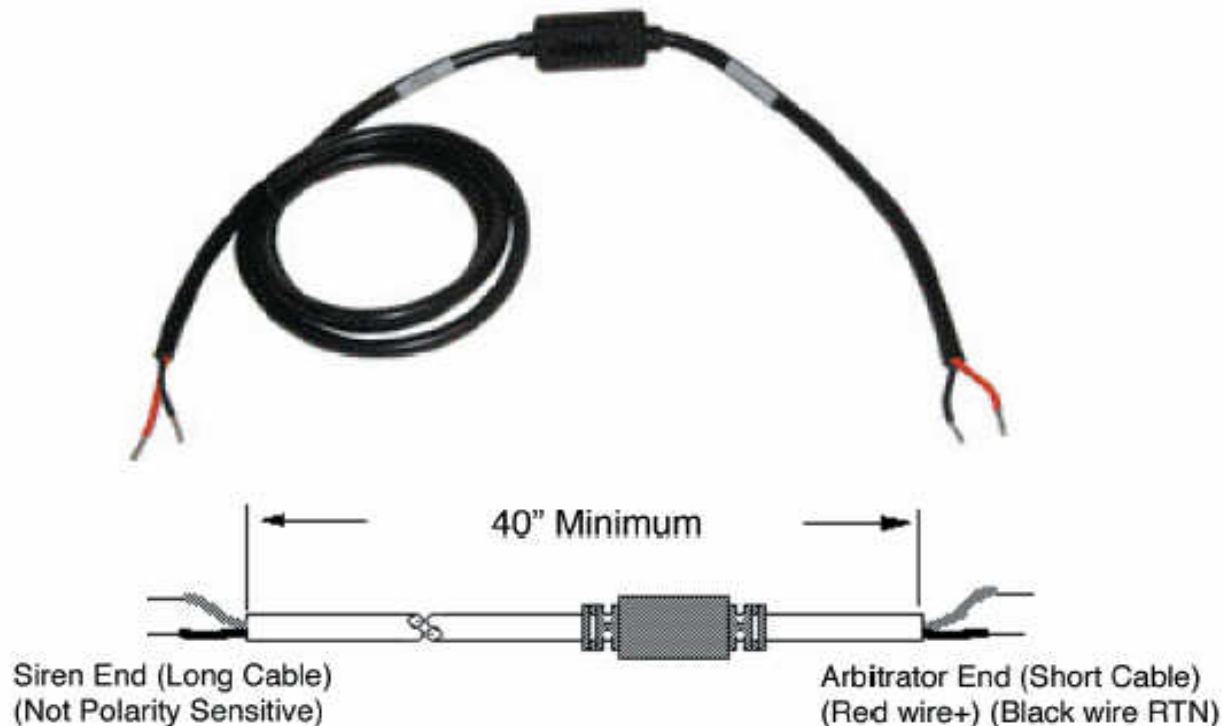
**Optoelectric Characteristics (at 10mA)**  
**Forward Voltage: 2.6VDC**  
**Luminous Intensity: 10mcd**  
**Peak wavelength: 650nm**



## Siren Detector Cable (Option)

### Siren Detector Cable for use with Panasonic Arbitrator

Special circuitry built within the cable will trigger the Arbitrator Mobile Digital Video System to turn on when police vehicle siren is initiated.



The Toughbook Arbitrator is the next-generation Mobile Digital Video System combining state-of-the-art digital recording, and data-compression technologies to achieve the world's most advanced, reliable, and easiest-to-query incident documentation system from Panasonic.

## **Siren Detector Cable (Option)**

### **Specification:**

- Overall length is 40 inches - minimum, 18 awg
- Max Input Voltage +/- 30V peak  
(Siren leads to Arbitrator RTN lead)
- Min input frequency: 400 Hz
- Max output voltage: 15 VDC
- Operating temp: 0°C to +65° C  
Storage temp: -40°C to +85° C

### **Contact Information:**

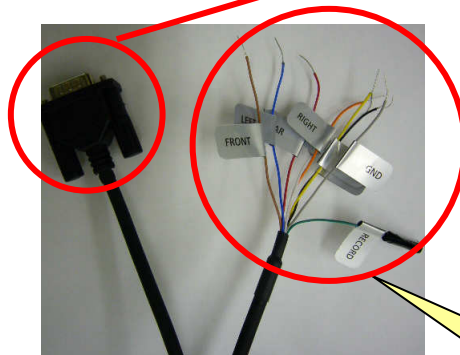
**LIND Electronics**

**[www.lindelectronics.com](http://www.lindelectronics.com)**

**Toll Free 1-800-659-5956**



# G-Force Sensor (Option) Connection



<Trigger Cable>



**Black (GND: -):**  
Connect to the negative (-) terminal  
of the battery

**Red (BATT: +):**  
Connect to a power supply that is  
constantly on, regardless of ignition  
key ON/OFF status

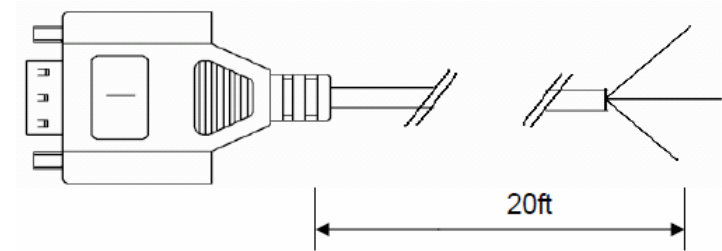
Connect each cable to the VPU  
trigger cable to record by the trigger



<Power Cable>



## G-Force Sensor (Option) Trigger



Pin #	Description	Cable Color
1	FLIP Out	White
2	RIGHT Out	Orange
3	LEFT Out	Blue
4	REAR Out	Red
5	FRONT Out	Brown
6	REC Out	Green
7	GND	Yellow
8	GND	Black
9	GND	Gray

If you have 5 trigger inputs available for VPU, connect Pin#1-5 with VPU trigger cable so that VPU can start recording by the impact from any 8 directions with indication on screen of SI and/or Control Panel.

If you have only 1 trigger input available for VPU, connect to Pin #6 to start recording by the trigger regardless of which direction the impact comes from.